



Primary Connections Early Stage 1

What's it made of?  
Properties and uses of materials in the school environment

RSCAM Ignition Years Curriculum Pack 3

- Identify examples of everyday materials
- Observe and describe properties of materials
- Describe why a material is used for a particular purpose
- Compare the properties of materials

Northern Territory Curriculum Framework 2009

**SI KGP 2** Learners explore objects and events using all their available senses for more extended periods and respond actively.

**NPM KGP 2**

**Outcome:** Learners recognise and discriminate between different objects and material and are aware of changes that can be caused by themselves, others and the environment.

**Key Indicator:** discriminate between and generalise about everyday objects and materials

**Structures, properties and use**

- understand it is possible to distinguish objects using their attributes
- focus on the attributes of objects, eg shape, parts, colour

**SI KGP 3** Learners explore, use and respond to changes to objects and events, and indicate preferences based on experiences.

**NPM KGP 3**

**Outcome:** Learners recognise and discriminate between different properties of materials and can describe familiar changes.

**Key Indicator:** identify and describe basic features of familiar objects

**Structures, properties and use**

- understand different objects have different features and uses
- understand we can use our senses to describe the properties of things, eg smooth, rough, hot, cold, salty, sweet
- use senses to explore different materials, eg touch
- investigate the properties of different things, eg hard, smooth, wet
- identify features of familiar objects, eg soft, hard, smooth, rough, hot, cold

Primary Connections Stage 2

Material world  
Properties of materials determine their use

RSCAM Primary Years Curriculum Pack 9

- Describe and compare the properties of materials
- Identify an appropriate use for a material based on its properties
- Select materials for various uses showing an awareness of consequences for humans and the environment
- Explain why the properties of a material make it suitable for a particular use

Northern Territory Curriculum Framework 2009

**SI KGP Band 1** Learners describe some ways that scientific activities affect their community. They focus on a problem using a familiar situation, responding to teachers' suggestions to carry out simple activities that require observation and sharing of observations.

**NPM Band 1**

**Outcome:** Learners understand that different materials have different properties, are used for different things and that materials can change.

**Key Indicator:** describe the observable properties of common materials used in a variety of everyday objects

**Key Indicator:** describe how changing familiar materials changes their properties

**Structures, properties and use**

- understand different things are made of different materials
- describe the properties of different materials, eg concrete is hard, cotton wool is soft
- identify different objects and the common materials they are made of, eg wood, metal, plastic, glass
- investigate and observe the properties of materials, eg which materials can be poured, which materials hold water

**Interactions and change**

- understand materials can change
- investigate, observe and group the changes in materials

**SI Band 2** Learners explore and engage with science in their interests and activities within and beyond school. They collaboratively plan, conduct and report on investigations related to their questions about living and non-living things and events. Learners begin to understand that in a fair test there are variables and the investigator only changes one of these to get an answer to their question they follow instructions, collecting and making limited records of their findings, saying whether or not what happened was expected.

**NPM Band 2**

**Outcome:** Learners understand that the properties of materials influence their uses and that materials may undergo a variety of changes.

**Key Indicator:** describe why particular materials are chosen for specific purposes in terms of their properties

**Structures, properties and use**

- understand any one object may be made of several different materials, eg car has metal doors, rubber tyres, plastic steering wheel and why this is so, related to their properties
- understand that the properties and uses of materials are related, eg glass is good for windows because you can see through it; metal, wood and concrete are hard materials and useful for building things
- investigate the elasticity, the hardness, or the strength of different materials
- compare the properties of an object with the material from which it is made, eg metal rooves are shiny, hard, light and waterproof

**SI Band 3** Learners apply their scientific understanding to make sense of their day-to-day experiences and interests. They are aware of the need for fair testing and the need to get more than one set of results in order to test their simple predictions (not guesses). They collect and organise numerical data and descriptive information using simple tables, diagrams and graphs; and identify main features, patterns and difficulties in the investigation.

**NPM Band 3**

**Outcome:** Learners understand the relationship between the properties, changes and uses of materials.

**Key Indicator:** describe relationships between properties, composition and uses of different materials

**Structures, properties and use**

- understand that different materials are used for different purpose and these are dependent on their properties
- relate the different properties and structures of materials to different uses, eg a sponge is used to soak up water as it has small hole for the water to fit into; plastics are not suitable for cooking in as they can melt

Key

SI = Science as Inquiry

NPM = Natural and Processed Materials Science strand

Coloured text = Learners know and understand that...

Black text = Learners are able to...

RSCAM = Remote Schools Curriculum and Assessment Materials

Learning Links portal: <https://portal.ntschoools.net/sites/LearningLinks/default.aspx>

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Primary Connections Stage 1

Spot the difference  
Changes to observable properties of materials (eg when solids melt)

- Identify everyday materials and their properties
- Observe and describe changes to the properties of everyday materials
- Compare the observable properties of everyday materials
- Describe how changing a material can change its properties

Northern Territory Curriculum Framework 2009

**SI KGP 3** Learners explore, use and respond to changes to objects and events, and indicate preferences based on experiences.

**NPM KGP 3**

**Outcome:** Learners recognise and discriminate between different properties of materials and can describe familiar changes.

**Key Indicator:** identify and describe basic features of familiar objects

**Key Indicator:** describe simple changes in materials

**Structures, properties and use**

- understand we can use our senses to describe the properties of things
- understand things can be grouped according to criteria that we choose, eg things I like, things that are soft, things that are heavy
- use senses to explore different materials, eg touch
- investigate the properties of different things, eg hard, smooth...
- identify features of familiar objects, eg soft, hard...
- group familiar materials according to properties such as hard, soft, rough, smooth...

**Interactions and change**

- understand the features of materials can be changed, it is possible to change things for a purpose
- recognise that materials can change

**SI KGP Band 1** Learners describe some ways that scientific activities affect their community. They focus on a problem using a familiar situation, responding to teachers' suggestions to carry out simple activities that require observation and sharing of observations.

**NPM Band 1**

**Outcome:** Learners understand that different materials have different properties, are used for different things and that materials can change.

**Key Indicator:** describe the observable properties of common materials used in a variety of everyday objects

**Key Indicator:** describe how changing familiar materials changes their properties

**Structures, properties and use**

- understand different things are made of different materials
- describe the properties of different materials, eg concrete is hard, cotton wool is soft
- identify different objects and the common materials they are made of, eg wood, metal, plastic, glass
- investigate and observe the properties of materials, eg which materials can be poured, which materials hold water

**Interactions and change**

- understand materials can change
- investigate, observe and group the changes in materials, eg which materials keep their own shape when you put something heavy on them and which things can be moulded into new shapes, how materials change when they are heated such as ice melting to water and then to steam, concrete does not change, wood burns

Primary Connections Stage 3

Package it better 😊  
Design and make a package to meet the criteria of a design brief

RSCAM Primary Years Curriculum Pack 3

- Design the characteristics of packages and the properties of materials used to make them
- Explain how and why materials are chosen for particular purposes
- Identify key design features and environmental effects of products and processes used to make packages
- Identify design criteria that reflect the design brief
- Explore relationships between the properties of materials and their use
- Explain options and reasons for selection of materials and the design of a package
- Generate package designs based on a design brief, that take into account some social and environmental implications
- Suggest creative solutions to a package and safely deliver a fragile gift

Northern Territory Curriculum Framework 2009

😊 Please note that the unit “Package it better” relates well to NTCF links marked with the icon 😊

**SI Band 2** Learners explore and engage with science in their interests and activities within and beyond school. They collaboratively plan, conduct and report on investigations related to their questions about living and non-living things and events. Learners begin to understand that in a fair test there are variables and the investigator only changes one of these to get an answer to their question they follow instructions, collecting and making limited records of their findings, saying whether or not what happened was expected

**NPM Band 2**

**Outcome:** Learners understand that the properties of materials influence their uses and that materials may undergo a variety of changes.

**Key Indicator:** describe why particular materials are chosen for specific purposes in terms of their properties

**Key Indicator:** identify a variety of changes that materials may undergo 😊

**Structures, properties and use**

- understand any one object may be made of several different materials, eg car has metal doors, rubber tyres, plastic steering wheel and why this is so, related to their properties 😊
- understand that the properties and uses of materials are related, eg glass is good for windows because you can see through it; metal, wood and concrete are hard materials and useful for building things 😊
- investigate the elasticity, the hardness, or the strength of different materials 😊
- compare the properties of an object with the material from which it is made, eg metal rooves are shiny, hard, light and waterproof 😊

**Interactions and change**

- understand some changes are permanent and some are non-permanent, eg when we heat ice it turns into water and then to steam but it can turn back into water and then ice when it is cooled; but when we burn wood it creates smoke, which goes into the air, heat which can warm us, and ash is left over and it cannot be changed back
- understand that some things can dissolve in water and other things do not, eg sugar and salt dissolve in water and sand does not
- describe changes in terms of permanent and non-permanent changes

**SI Band 3** Learners apply their scientific understanding to make sense of their day-to-day experiences and interests. They are aware of the need for fair testing and the need to get more than one set of results in order to test their simple predictions (not guesses). They collect and organise numerical data and descriptive information using simple tables, diagrams and graphs; and identify main features, patterns and difficulties in the investigation.

**NPM Band 3**

**Outcome:** Learners understand the relationship between the properties, changes and uses of materials.

**Key Indicator:** describe relationships between properties, composition and uses of different materials 😊

**Key Indicator:** classify materials as solids, liquids, gases and explain why 😊

**Structures, properties and use**

- understand that different materials are used for different purposes and these are dependent on their properties 😊
- relate the different properties and structures of materials to different uses, eg a sponge is used to soak up water as it has small hole for the water to fit into; plastics are not suitable for cooking in as they can melt 😊

**Interactions and change**

- understand reactions consist of inputs (reactants) and outputs (products)
- identify reversible and irreversible changes
- investigate the conditions that lead to a change of state of different materials
- investigate the effect of temperature on the rate of different reactions, eg dissolving sugar, food rotting

**SI Band 4** Learners consider the impact of applications of science and technology on themselves, society and the environment. They plan and conduct different types of investigations, taking account of the main variables; collect data using repeat trials or replicates; present data in appropriate formats, interpret patterns in data or information prepared in different formats; and make general suggestions for improving the investigation.

**NPM Band 4**

**Outcome:** Learners understand that the properties, changes and uses of materials are related to their structure.

**Key Indicator:** describe the features of physical and chemical changes

**Interactions and change**

- understand rates of reaction can be changed by increasing the temperature (providing more heat energy), and by stirring
- understand that some reactions are reversible and some are not
- when a substance such as sugar dissolves it has broken down into particle sizes that are too small to be seen
- identify evidence of a chemical change, such as a change of temperature or new products being formed, eg vinegar and bicarbonate of soda reacting to form a gas
- describe the effects of heating and stirring on the rate of reactions and relate these to everyday situations, eg making coffee
- investigate and explain physical changes such as melting, freezing, evaporating, condensing and dissolving in terms of the particle model